

**ABSTRACT****ANALYSIS OF BIOLOGICAL SAMPLES.**

The invention provides a method of determining the degree of similarity between gene expression in a biological sample of interest and that in individual reference samples by use of:

- i) a nucleic acid probe library representative of a pattern of gene expression in the biological sample of interest; and
- ii) a plurality of reference samples, each of which is a nucleic acid library representative of a pattern of gene expression in a reference biological sample from which it was derived.

The method is effected by:

- a) forming a first set of immobilised, hybridised products by treating the individual reference samples with the probe library under hybridising conditions (one or other of the reference samples or the probe library being in immobilised form) and removing non-immobilised material; and
- b) forming a second immobilised product by treating a sample of the free probe library with an immobilised sample of the probe library under hybridising conditions, and removing non-immobilised material.

The first set of immobilised products and the second immobilised product are then subjected to progressive dissociation, and the dissociation monitored. Comparison of the dissociation of the first set of immobilised products and the second immobilised product allows determination of the degree of similarity of gene expression in the sample of interest and in the reference biological samples.